SBI3U1 Unit: Plants-Anatomy, Growth and Function Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- |
| **K/U**  **/17** | **APP**  **/15** | **Comm**  **/15** | **T/I**  **/24** |

**Summative Test**

1. **MULTIPLE CHOICE: Choose the MOST correct response by circling it. (10 K/U, 10 T/I)**
2. Which of the following are ways that plants are used in society?
3. Pharmaceuticals C. Clothing
4. Perfumes D. All of the above

Why did you choose this answer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which of the following is not an artificial selection strategy used in plants?
2. Mass Selection C. Cross Breeding
3. Pure line Selection D. Cloning

Why did you choose this answer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which of the following is not considered a nutrient for plants?
2. Nitrogen C. Potassium
3. Phosphorus D. Sodium

Why did you choose this answer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which of the following processes does not lower plant biodiversity?
2. Primary Succession C. Bioaccumulation
3. Artificial Selection D. Monocultures

Why did you choose this answer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What kind of tissue is xylem?
2. Dead cells for transporting water.
3. Living cells for transporting sucrose.
4. Dead cells for transporting sucrose.
5. Living cells for transporting water.

Why did you choose this answer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What do mosses need to live?
2. A constant supply of sunlight.
3. A constant supply of moonlight.
4. A constant supply of fertilizer.
5. A constant supply of water.

Why did you choose this answer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A runner’s function is to \_\_\_\_\_\_\_\_.
2. Store starch C. Reproduce
3. Provide Strength D. Transport

Why did you choose this answer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**B. TRUE AND FALSE: Choose the most correct response by circling T or F and if it is False, change the sentence to be True. Simple making the sentence negative will not receive full marks. You must demonstrate your understanding by making an appropriate change. (5 K/U; 3 T/I)**

1. A sunflower is a non-vascular plant. T/F

2. A root is covered with a waxy cuticle for protection. T/F

3. A climax community is characterized by its stability. T/F

4. Gymnosperm pollination is a form of sexual reproduction T/F

5. Angiosperms undergo one of either mitosis or meiosis T/F

**C. STRUCTURES: Fill in the chart below. Be sure to explain your reasons for choosing monocot or dicot clearly and succinctly in the “how do you know?” section. (5 K/U)**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| What is this a picture of? | Stem | Leaf | Root |
| What is its purpose in a plant? | Stability/Transport/  Storage | Photosynthesis | Retrieving water/nutrients  Storage |
| Is it a monocot or dicot? | Monocot | Dicot | N/A |
| How do you know? | Scattered vascular bundles | Net like veins | N/A |

**D. SHORT ANSWER: Answer the following questions in the space below.**

1. The following graph tracks the amount of corn harvested from Old McDonald’s farm.

Over the past 10 years there has been a huge market demand for corn, so this farm has grown corn exclusively.

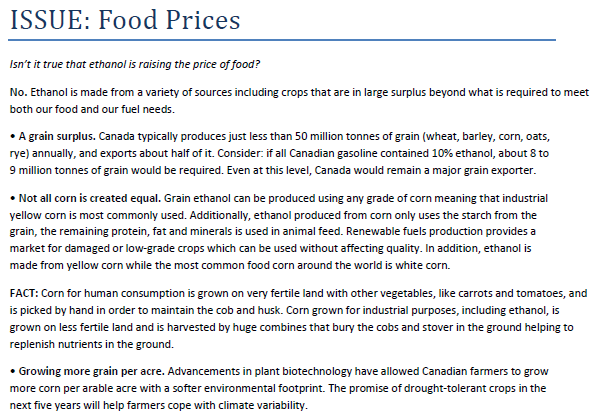
Part I. Using the above information explain what you see in the graph. (3A)

Answer: The farm is employing monocultures as its agricultural practice. Since this farm is only growing corn, the drop in crop production over the years is due to decreasing soil fertility.

Part II. Suggest 2 possible strategies that the farmer can use to improve crop production and explain your reasoning. (4A)

Answer: The corn crop has been exhausting the same type of nutrients from the soil, without giving the soil an opportunity to replenish the assimilated nutrients. Two possible strategies that can help improve this farm’s corn production would be to try crop rotation and use fertilizer to replenish the soil’s nutrients that has used up by the corn.

1. Read the following excerpt from the “Ethanol Fact Sheet” published by the Canadian Renewable Fuels Association:



a. What is the bias and what did you use to determine it (2 T/I):

b. Using the above article and your knowledge of biofuels write a persuasive paragraph from a different perspective (bias). (4 A)

1. Explain the purpose of stomata. What can we infer about a plant with very few stomata? Why? (3 T/I)

Answer: control the movement of gasses in/out and water out. that it is in a very dry climate as the smaller number of stomata will allow for less water loss.

1. Compare and Contrast the two methods of entirely natural reproduction in plants (6 T/I)
2. Why are grafting and root cutting the two most common methods of plant? (3 T/I)
3. A farmer has noticed that her crops are growing at a faster rate this season than the season before. In this growing season, there has been more rainfall than usual and the temperature has been generally warmer.

The farmer wants to know why her crops are growing so quickly. Briefly outline the **key points** that you need to consider when creating an experiment you would perform to explain what is causing this fast growth. (4 A)

Answer:

* 1 control – average water and temp
* 1 plant this year’s temp
* 1 plant this year’s water
* Keep all other conditions the same as average years